COGNITIVE COMPUTING IN BANKING
By Vidisha Sharma, Consultant

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THE COGNITIVE BANK OF THE FUTURE

Imagine a bank that makes all decisions instantly, using artificial intelligence solutions and based on a combination of cumulative knowledge (big data) and real time data (fast data). This phenomenon, known as cognitive banking, will fundamentally change the way banks interact with information and customers. So, where can cognitive banking be used?

The answer is anywhere, be it qualifying for a mortgage application or identifying a potentially fraudulent transaction. The use of banks' big data offers infinite possibilities for curating and presenting information to customers. But let's first take a brief look at what cognitive banking is.

According to Techopedia[1], cognitive computing describes technologies that are based on the scientific principles behind artificial intelligence and signal processing, encompassing machine self-learning, human-computer interaction, natural language processing, data mining and more.

HOW IT WORKS

A cognitive system accumulates a considerable amount of knowledge to give fact-based advice to both customers and employees. It is a self-learning system that uses data mining, pattern recognition and natural language processing to replicate the way the human brain works. It inputs a combination of structured and unstructured data, both external and internal, to process any decision making. The more the system learns, the more efficient and accurate it becomes, leading to a virtuous cycle of efficiency and customer satisfaction.

Structured data from operational systems and unstructured data, which banks have attained over the last several decades, are invaluable for business. Today, unstructured data makes up the majority (experts say 80 percent)[2] of available data and includes emails, images, video, audio, news, webpages, blogs and social media. This raw material processed in a cognitive way creates a self-sustainable ecosystem for business, where customers, employees and partners interact via an easy-to-use interface.
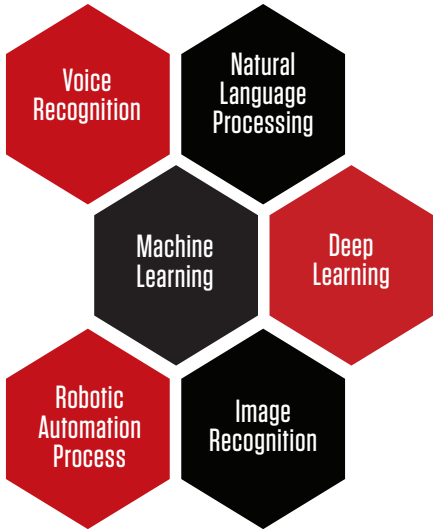
Machine learning, robotics process automation, natural language processing, smart workflow and other cognitive tools enable development of deep domain-specific expertise and the automation of related tasks as requirements evolve. These tools reduce the need for human interaction and increase effectiveness through new insights and ways of working. In contrast with traditional computing models which use preconfigured rules and programs, cognitive systems can handle dynamic situations with voluminous data.
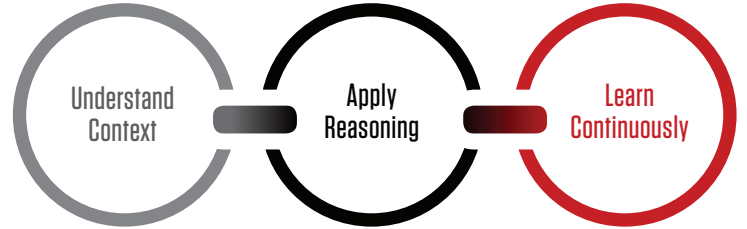
REFERENCES
[1] https://www.techopedia.com/definition/32037/cognitive-computing
[2] https://www.forbes.com/sites/forbestechcouncil/2017/06/05/the-big-unstructured-data-problem/#235d5bea493a

AI TOOLS

- Voice Recognition
- Natural Language Processing
- Machine Learning
- Deep Learning
- Robotic Automation Process
- Image Recognition

COGNITIVE ANALYTICS

ENABLE

Understand Context → Apply Reasoning → Learn Continuously
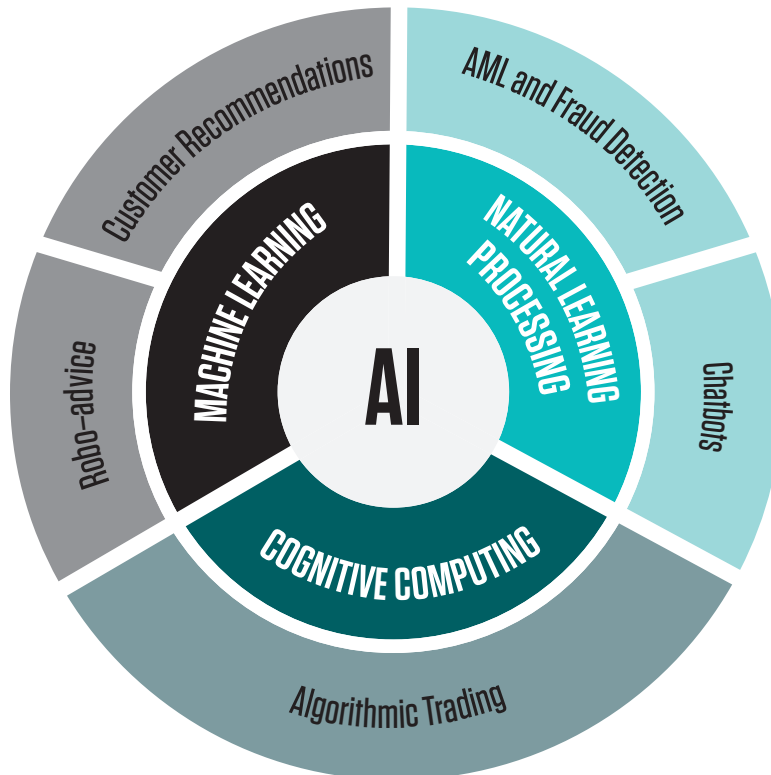
APPLICATION

Banks recognize the trend and need for cognitive systems and technologies. Cognitive capabilities can deliver personalized support to financial services customers in a way that radically changes their experience of bank's brand.

ARTIFICIAL INTELLIGENCE IN BANKING

AI

- MACHINE LEARNING
  - Customer Recommendations
  - Robo-advice
- NATURAL LEARNING PROCESSING
  - AML and Fraud Detection
  - Chatbots
- COGNITIVE COMPUTING
  - Algorithmic Trading

HERE ARE FOUR EXAMPLES OF HOW
COGNITIVE BANKING COULD REVOLUTIONIZE BANKING

PERSONAL BANKING

With cognitive banking, customers can have a virtual assistant who knows all their banking data and is able to service their individual banking needs.

The servicing, done faster than a human can, includes answering questions on account balance and making transactions as well as providing information about spending habits. These virtual bots will surpass capabilities of human bankers. They can notify customers of overspend on certain products, recommend in real time opportunities to reduce debt or save money, and alert immediately of credit score dips. This ensures that services are tailored to an individual, rather than a segment based on age or income.

WEALTH MANAGEMENT

Cognitive capabilities aim to deploy a chatbot or voice bot that mimics the interaction of a wealth manager, but again faster and better than a human. An example would be a robo-advice bot presenting various investment products available for the cash sitting around in a customer's savings account. Cognitive solutioning can also help make customers aware of higher-value investments as opposed to the low return products that they may be inclined to choose.

By facilitating artificial intelligence and personalized dialogue, banks can help customers make better wealth investment decisions based on their individual situation.

CALL CENTER OPERATIONS

A cognitive bank call center will predict and understand a customer's life events and proactively offer the most suitable and effective service. With the customer's permission, the service will incorporate information from social networks and various preferences options and use that information to enhance the advice and overall experience. This can all be achieved without redirecting the call to multiple departments, saving customers' time.

LENDING

Cognitive solutions can also improve loan underwriting while helping avoid defaults. This requires speed and accuracy to make informed decisions. By using artificial intelligence, both the customer and the bank can get comprehensive information on whether someone qualifies for a loan or not. This high degree of personalization means that a bank will always offer affordable credit or loan services that fit with customers' overall financial goals and milestones.

RBC'S NOMI FIND & SAVE

Royal Bank of Canada (RBC) has launched a client pilot, NOMI Find & Save[3], an automated savings service to help clients boost their savings. The application uses predictive analysis of individual behavior and spending patterns and enables clients with personalized insight and advice for day to day money management. NOMI Find & Save blend artificial intelligence and client data, identifying trends, unusual activity and potential savings opportunities.

CONCLUSION

With digital natives and other generations increasingly demanding personalized services to manage their finances, banks must find new ways to serve and engage customers or risk becoming invisible. We believe that financial institutions wanting to gain competitive advantage will be dependent on the ability to use cognitive solutions to aid decision making, execute transactions and collaborate with customers, as well as provide enhanced, personalized and differentiated experience. Cognitive banking is set to change customer service as we know it today.

REFERENCES

[3] https://www.bankingtech.com/2017/09/royal-bank-canada-pilots-ai-powered-finance-guide/

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ABOUT CAPCO

Capco is a global technology and management consultancy dedicated to the financial services industry. Our professionals combine innovative thinking with unrivalled industry knowledge to offer our clients consulting expertise, complex technology and package integration, transformation delivery, and managed services, to move their organizations forward. Through our collaborative and efficient approach, we help our clients successfully innovate, increase revenue, manage risk and regulatory change, reduce costs, and enhance controls. We specialize primarily in banking, capital markets, wealth and investment management, and finance, risk & compliance. We also have an energy consulting practice. We serve our clients from offices in leading financial centers across the Americas, Europe, and Asia Pacific.

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